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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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WALL & TONG, LLP/ ALCATEL-LUCENT USA INC. 595 SHREWSBURY AVENUE SHREWSBURY, NJ 07702			EXAMINER PASIA, REDENTOR M	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/779,442

Applicant(s)

LEE, HO-KEUNG

Examiner

REDENTOR M. PASIA

Art Unit

2416

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 13, 14 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 14 and 17-22 is/are rejected.
- 7) ☒ Claim(s) 13 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on December 5, 2008 has been entered. Claims 1, 13-14, 16-17, 19-21 have been amended. Claims 7-12 and 15 have been canceled. No claims have been added. Claims 1-6, 13-14, 16-22 are still pending in this application, with claims 1, 13 and 17 being independent.

Response to Arguments

2. Applicant's arguments with respect to claims 1-6, 14 and 17-22 have been considered but are moot in view of the new ground(s) of rejection.
3. Applicant's arguments, see Applicant's Remarks, filed December 5, 2009, with respect to claims 13 and 16 have been fully considered and are persuasive. The rejection of claims 13 and 16 has been withdrawn.

Claim Objections

4. **Claim 13 and 17** are objected to because of the following informalities:

Claim 13 shows the claim limitations "...fetching from the received circuit identifier information circuit identifier information associated with..." in lines 20-21. This claim limitation should be revised to "fetching from the received circuit identifier information, a circuit identifier

information associated with..." (emphasis on comma between two instances of circuit identifier information). By including the comma (,), the claim language will be easier to follow.

Claim 17 shows the limitation "...in of the network" in line 11. The limitation should be revised to "...in [[of]] the network."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 2-5, 13, 16** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recite the limitation "the step of receiving..." in lines 1-2. It is unclear if "the step of receiving a notification signal..." refers to a previous "step of receiving". Since this is the first incidence of the claim limitation "the step of receiving a notification signal...", the claim limitation "the step of receiving a notification signal..." in lines 1-2 must be revised to "[[the]] a step of receiving a notification signal..." There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recite the limitation "the step of determining..." in lines 1-2. It is unclear if "the step of determining..." refers to a previous "step of determining". Since this is the first incidence of the claim limitation "the step of determining...", the claim limitation "the step of

determining..." in lines 1-2 must be revised to "[[the]] a step of determining..." There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recite the limitation "the step of determining..." in lines 1-2. It is unclear if "the step of determining..." refers to a previous "step of determining". Since this is the first incidence of the claim limitation "the step of determining...", the claim limitation "the step of determining..." in lines 1-2 must be revised to "[[the]] a step of determining..." There is insufficient antecedent basis for this limitation in the claim.

Claim 4 also recites the limitation "the communication path data" in line 2. It is unclear to which the limitation "the communication path data" refers to. The limitation "the communication path data" in line 2 must be revised to "[[the]] communication path data". There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recite the limitation "the step of detecting..." in lines 1-2. It is unclear if "the step of detecting ..." refers to a previous "step of detecting". Since this is the first incidence of the claim limitation "the step of detecting...", the claim limitation "the step of detecting..." in lines 1-2 must be revised to "[[the]] a step of detecting..." There is insufficient antecedent basis for this limitation in the claim.

Claim 13 shows the limitation "the step of querying" in line 22. It is unclear if "the step of querying" in line 22 refers to the querying step in line 7 or the querying step of 14. Applicant is advised to revise the claim language in order to differentiate properly the querying step in line 7 and in line 14.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim(s) 1-6, 13-14, 16 is/are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. **Claims 1-2, 14, 17-18** are rejected under 35 U.S.C. 102(e) as being anticipated by Natarajan et al. (US 7,293,106; hereinafter Natarajan).

As to claim 1, Natarajan shows a method (Figures 1-2 shows a method) of analyzing a plurality of network elements (Figures 1-2; note that the method includes the step of determining

other nodes in a path based on information requested) configured to support at least one established communication path in a network (Figures 1-2; note that the information obtained is used to determine other nodes in the path from the start node to the end node of a given network; col. 2, lines 12-18; the path is considered to be an active path since the information is obtained from at least some of the nodes in the path, in response to the request. In this instance, the active path is seen as being the same as an established communication path. This interpretation will also be applied to the remainder of the Office Action.), the method comprising:

querying (Figures 1-2, steps 200-204; note that information obtained in step 204 related to routing table information; col. 2, lines 22-34; note that the routing table (i.e. MIB table) is maintained using Simple Network Management Protocol (SNMP); col. 1, line 11-21; further on, SNMP uses queries to obtain information from MIB tables of nodes) a network element (Figure 1-2; note current node in the path) in the network (Figures 1-2; col. 2, lines 7-9; note the network that includes the active path between start node and end node) for local network information (Figures 1-2; col. 2, lines 48-49; col. 3, lines 16-17; note information from the routing table. This information can be seen as local network information since the information only deals with information relating to the active path.);

receiving (Figures 1-2; step 204, obtaining step) the local network information from the network element in response to querying (Figure 2, step 204; note that step 204 includes obtaining (receiving) information from the routing table of the current node (claimed network element) in response to the noted queries using SNMP.)

the local network information (Figures 1-2; note information from routing table) comprising one or more items selected from the group including topology information, and

connection information (Figures 1-2; col. 2, lines 22-47; note that the information included in a routing table includes information concerning next hop information(claimed topology and connection information). Additionally, the routing table is noted to include information about routes/paths and connectivity among nodes.);

analyzing the local network information received (Figures 1-2; step 204; col. 3, liens 19-20; note that the information from the routing table of the current node in the path is *used to find* the “another” node in the path; note that in order find the “another” node, the current node analyzes (*used to find*) the information obtained from the routing table.) to map an established communication path in the network (Figure 2, step 212 shows the step of producing electronic representation of nodes in the path; col. 4, lines 14 to 16; it is noted that the electronic representation (i.e. electronic display, table, printed representation) can be produced at any time in the Figure 2 method; the electronic representation shows the connectivity between the nodes along the active path. In this instance, the Examiner views step 212 as being performed after step 204);

responsive to the local network information received and the established communication path mapped in the analyzing step (Figure 2, step 208 is after 204 and the transferred 212 and in this instance, step 208 is responsive to prior steps), selecting a next network element of the established communication path for querying (Figure 2, step 208, setting current node to another node along the path, afterwards, the method repeats in order to obtain information from the routing table of the current node until an end node is found); and

if the next network element has been selected, iterating the method from the querying step for the next network element (Figure 2, step 208, setting current node to another node along

the path, afterwards, the method repeats in order to obtain information from the routing table of the current node until an end node is found).

As to claim 2, Natarajan shows the step of receiving a notification signal from one or more network elements (Figures 1-2; step 200; note the request made; the request can be a user request (i.e. user input from terminal) initiated by software (i.e. software running from network manager or other network elements from network), or any other type of request for node information),

the notification signal indicative of a network event (Figures 1-2; the request is for an electronic representation of nodes in the active path from start node and end node; this can be seen as either updating topology information; note that the network event in this case is the request for electronic representation of the active path. If a network element, or a user requests this information, the network manager sees this as an instruction/event that it has to perform in order to satisfy the request.), and

wherein the step of querying is initiated in response to receiving said notification signal (Figures 1-2; note that the requesting step is performed prior to the querying step, and thus the querying step is initiated in response to the requesting step.).

As to claim 14, Natarajan shows a step of storing communication path data of the established communication path in the network (col. 4, lines 42-46; note that the network topology information (i.e. information obtained in method of Figures 1-2) is stored in a network manager 312 of a network manager computer 314).

As to claim 17, Natarajan shows an apparatus (Figure 3, Network Manager Computer 314) for analyzing a plurality of network elements (Figures 1-2; ; note methods performed by

Network Manager; note that the method includes the step of determining other nodes in a path based on information requested) interconnected to form a communication network (Figure 3 shows a network with interconnected network elements) and configured to support at least one established communication path in the communication network, (Figures 1-2; note that the information obtained is used to determine other nodes in the path from the start node to the end node of a given network; col. 2, lines 12-18; the path is considered to be an active path since the information is obtained from at least some of the nodes in the path, in response to the request. In this instance, the active path is seen as being the same as an established communication path. This interpretation will also be applied to the remainder of the Office Action.) the apparatus comprising:

means (Figure 3; network manager 312) for querying (Figures 1-2, steps 200-204; note that information obtained in step 204 related to routing table information; col. 2, lines 22-34; note that the routing table (i.e. MIB table) is maintained using Simple Network Management Protocol (SNMP); col. 1, line 11-21; further on, SNMP uses queries to obtain information from MIB tables of nodes) a network element (Figure 1-2; note current node in the path) in the communication network (Figures 1-2; col. 2, lines 7-9; note the network that includes the active path between start node and end node) for local network information (Figures 1-2; col. 2, lines 48-49; col. 3, lines 16-17; note information from the routing table. This information can be seen as local network information since the information only deals with information relating to the active path.),

the local network information (Figures 1-2; note information from routing table) comprising one or more items selected from the group including topology information, and

connection information (Figures 1-2; col. 2, lines 22-47; note that the information included in a routing table includes information concerning next hop information(claimed topology and connection information). Additionally, the routing table is noted to include information about routes/paths and connectivity among nodes.);

means (Figure 3; network manager 312), responsive to receipt of the local network information, for analyzing the local network information received (Figures 1-2; step 204; col. 3, lines 19-20; note that the information from the routing table of the current node in the path is *used to find* the “another” node in the path; note that in order find the “another” node, the current node analyzes (*used to find*) the information obtained from the routing table.) to map an established communication path in the network (Figure 2, step 212 shows the step of producing electronic representation of nodes in the path; col. 4, lines 14 to 16; it is noted that the electronic representation (i.e. electronic display, table, printed representation) can be produced at any time in the Figure 2 method; the electronic representation shows the connectivity between the nodes along the active path. In this instance, the Examiner views step 212 as being performed after step 204); and

means (Figure 3; network manager 312), responsive to the local network information received and the established communication path mapped in the analyzing means (Figure 2, step 208 is after 204 and the transferred 212 and in this instance, step 208 is responsive to prior steps), for selecting a next network element of the established communication path for querying (Figure 2, step 208, setting current node to another node along the path, afterwards, the method repeats in order to obtain information from the routing table of the current node until an end node is found);

wherein the means for querying is responsive to a notification that the next network element has been selected (Figure 2, step 208, setting current node to another node along the path, afterwards, the method repeats in order to obtain information from the routing table of the current node until an end node is found).

As to claim 18, this claim is rejected using the same reasoning presented in the rejection of claim 2.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claims 3-6, 19-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Natarajan et al. (US 7,293,106; hereinafter Natarajan) in view of Bertin et al. (US 6,400,681; hereinafter Bertin).

As to claim 3, Natarajan shows the analyzing the communication path data step, as discussed above, however, Natarajan does not specifically show the step of determining network capacity using communication path data from the analyzing step.

However, the above-mentioned claim limitation is well-established in the art as shown by Bertin. Bertin shows the step of determining network capacity after analyzing path parameters (Figure 6-7 shows that one of the characteristics indicated in the Topology Database/Link Characteristics is the total capacity (claimed bandwidth); Figure 7 (steps that include 707)

specifically show the step of determining whether the link has enough bandwidth after analyzing path parameters in step 704).

In view of the above, having the system of Natarajan and then given the well- established teachings of Bertin, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the system of Natarajan, as taught by Bertin in order to minimize the connection setup delay and in particular the time to select an optimal path throughout the network (col. 5, lines 49-51).

As to claim 4, Natarajan shows the analyzing the communication path data step, as discussed above, however, Natarajan does not specifically show the step of determining network performance using the communication path data from the analyzing step.

However, the above-mentioned claim limitation is well-established in the art as shown by Bertin. Bertin shows the step of determining network performance (col. 12, 17-37; it is noted that there are multiple variables that determine the performance of a network, which includes connection setup delay, connection blocking probability, etc. The quantities have an affect upon how paths are computed. It is noted that these parameters are related in determining the elements of the routing database shown in Figure 4).

In view of the above, having the system of Natarajan and then given the well- established teachings of Bertin, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the system of Natarajan, as taught by Bertin in order to minimize the connection setup delay and in particular the time to select an optimal path throughout the network (col. 5, lines 49-51).

As to claim 5, Natarajan shows the analyzing the communication path data step, as discussed above, however, Natarajan does not specifically show the step of detecting network faults using communication path data from the analyzing step.

However, the above-mentioned claim limitation is well-established in the art as shown by Bertin. Bertin shows the step of detecting network faults (col. 12, 17-37; it is noted that there are multiple variables that determine the performance of a network, which includes loss probability, error probability, etc. The quantities have an affect upon how paths are computed. It is noted that these parameters are related in determining the elements of the routing database shown in Figure 4; Figure 12, step 1201; col. 21, lines 40-42 shows a test that determines whether or not the configuration update is related to a change in the link state (i.e. failure on the link).)

In view of the above, having the system of Natarajan and then given the well- established teachings of Bertin, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the system of Natarajan, as taught by Bertin in order to minimize the connection setup delay and in particular the time to select an optimal path throughout the network (col. 5, lines 49-51).

As to claim 6, Natarajan shows the topology information includes a routing table (Figures 1-2; col. 2, lines 22-34; note information from routing table). Also, Natarajan shows the connection information, as discussed in rejection of claim 1, however, Natarajan does not specifically show a connection table.

However, the above-mentioned claim limitation is well-established in the art as shown by Bertin. Bertin shows a routing table and a connection table (Figures 4-6; col. 5, lines 55-60 shows a Routing Database (claimed routing table) for storing the selected or computed paths

with their characteristics and the Topology Database (claimed connection table) for storing network configuration and traffic characteristics. The Routing Database is updated simultaneously with the Topology Database.).

In view of the above, having the system of Natarajan and then given the well- established teachings of Bertin, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the system of Natarajan, as taught by Bertin in order to minimize the connection setup delay and in particular the time to select an optimal path throughout the network (col. 5, lines 49-51).

As to claims 19, 20, 21 and 22, these claims are rejected using the same reasoning set forth in the rejection of claims 3, 4, 5, and 6, respectively.

Allowable Subject Matter

12. **Claims 13 and 16** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, and the rejections under 35 U.S.C. 101, set forth in this Office action.

The claimed invention presented in **independent claim 13** is directed to a method for analyzing a plurality of network elements configured to support at least one established communication path of a network. Independent claim 13 identifies distinct features as claimed below:

"13. A method for analyzing a plurality of network elements configured to support at least one established communication path of a network, the method comprising:

receiving a notification signal from a network element, said notification signal indicative of a new established communication path in the network, said notification signal including circuit identifier information;
querying the network element in the network for connection information;
receiving the connection information from the network element in response to querying;
comparing the connection information with the circuit identifier information to determine a match condition; and
if the match condition occurs in the comparing step:
querying the network element for routing information;
receiving the routing information from the network element;
analyzing the routing information received to map the new established communication path in the network;
selecting a next network element to query along the new established communication path; and
if the next network element has been selected, fetching from the received circuit identifier information circuit identifier information associated with the next network element and iterating the method from the step of querying for the next network element."

The closest prior art, Natarajan et al. (US 7,293,106; hereinafter Natarajan) discloses querying the network element for routing information; receiving the routing information from the network element; analyzing the routing information received to map the new established communication path in the network; selecting a next network element to query along the new established communication path (details provided in the above rejection of independent claims 1 and 17.).

Specifically, Natarajan does not disclose the circuit identifier information and the step of comparing (matching) the connection information along with the circuit information to determine a match. It should also be further noted that either information (i.e. connection information and circuit identifier information) are received from prior reception of a notification

signal (for the circuit identifier information) and the reception of the connection information in response to the first querying step.

To conclude, the prior art Natarajan, either singularly or in combination, fails to anticipate or render the above features of the present application obvious.

Claim 16 also shares the same features of independent claim 13 due to its dependency on claim 13. Thus, the same reasoning is also applied to claim 16.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to REDENTOR M. PASIA whose telephone number is (571)272-9745. The examiner can normally be reached on M-F 7:30am to 4:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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